993-67

NPIC/D-32/67

Declass Review by NGA.

MEMORANDUM FOR: Deputy Director for Intelligence

SUBJECT : Request for Approval of the Fiber Optics Viewer Modification with [redacted] from FY 1967 Funding

25X1

REFERENCE : Chief, Administrative Staff, O/DDI Memorandum of 4 February 1964 on: "Approval of R&D Activities"

1. The Fiber Optics Viewer Modification Project has been prepared for approval in order to carry out contract negotiations in FY 1967.

2. Large volumes of stereo reconnaissance photography are being received in the Center, and require precision stereo measurements to thoroughly exploit them. A valuable but complex instrument which would satisfy our requirements is under development, but cannot be completed for at least three years.

3. NPIC will require additional mensuration instruments in anticipation of the increased requirements for mensuration of imagery as a result of JIIRG, and will in addition, require the replacement for two [redacted] Comparators now at NPIC on loan from the Army. Instrument shortage would probably commence in FY 1968 if action is not immediately taken to obtain stereo measurements capabilities to fulfill the requirements for at least three years.

25X1

4. The modification of the Fiber Optics Viewer will provide NPIC with an economical interim capability for quick stereo readout, available by September of this year. By approval of this project, NPIC will make available an expensive and potentially very useful mensuration instrument now in-house but not in use.

5. The attached staff study, tabs, and contract proposal present the complete schedule, plans, and justification for the study.

SECRET

SUBJECT: Request for Approval of the Fiber Optics Viewer Modification with [redacted] from FY 1967 Funding

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6. It is recommended that this project be approved at a funding level of [redacted] in FY 1967.

ARTHUR C. LUNDAHL
Director
National Photographic Interpretation Center

Attachments: a/s

APPROVED: [redacted]
R. J. SMITH
Deputy Director for Intelligence

28 MAR 1967
DATE

Distribution:
Original - NPIC/SS/LB (after approval)
1 - DDI
2 - NPIC/O/Dir
1 - NPIC/TDS/DS

25X1

TRANSMITTAL SLIP	DATE
TO: [redacted] NPIC	
ROOM 5S [redacted]	

REMARKS:

File Copy

Carole

file #02067

FROM: DDI (After approval)		
ROOM NO.	BUILDING HQS.	EXTENSION

FORM NO. 241 1 FEB 55 — REPLACES FORM 36-8 WHICH MAY BE USED. (47)

Approved For Release 2005/02/17 : CIA-RDP78B04770A000100070013-1

3 March 1967

FIBER OPTIC VIEWER MODIFICATION -- STAFF STUDY
#02067

1. PROBLEM:

To obtain a reliable interim capability for making measurements on operational stereoscopic reconnaissance photography.

2. FACTS BEARING ON THE PROBLEM:

a. All present or planned photographic reconnaissance systems will have stereo coverage.

b. The NPIC's capability to measure stereoscopically is limited to the [redacted] RIC-1 and the [redacted] Model 552 Stereo Point Transfer Device.

c. A high precision stereo comparator is under development, but it will not be operational for at least three years.

d. The quantity and resolution of stereoscopic reconnaissance photography is rapidly increasing, presenting additional mensuration requirements for even greater precision and volume.

e. An immediate need exists for an additional stereoscopic measuring instrument. This need cannot be filled by the available cartographic stereo comparators due to their low resolution and magnification.

3. DISCUSSION:

a. Background

The stereo comparators available on today's market are all mapping type instruments. They were designed for this specific use, and the optical systems are magnification and resolution limited in respect to our current reconnaissance photography. The [redacted] RIC-1 stereo comparators are representative of this type of instrument.

The [redacted] Model 552 Stereo Point Transfer Device has recently been installed in the NPIC. This instrument is basically the same instrument as the Model 552A Fiber Optic Viewer, but it has the added capability of a laser marking device and four-axis digitizers. Both instruments have a magnification range of 1.6X to 120X and can resolve about 57 lines/mm on a high contrast target. Both instruments can accommodate chip or roll film in any width up to 9 1/2 inches and both have full format scanning of 10 inches by 20 inches.

The Model 552 Stereo Point Transfer Device has a measuring capability over the entire 10 inch by 20 inch format of both film stages.

The Photographic Analysis Group of NPIC has a Model 552A Fiber Optic Viewer which is not being fully utilized. With the addition of encoders, digitizers, and cam correctors, this instrument could be converted into a reliable stereo comparator and be operational in less than six months.

In order to reduce operator fatigue, it is also proposed that a power assist film drive be added to both the Model 552 and 552A.

b. Origin of Concept

In a memo dated 30 December 1966, the Center's Technical Intelligence Division expressed the need for an interim stereoscopic mensuration instrument to handle requirements until the High Precision Stereo Comparator is delivered three years hence. The same memo suggested digitizing a Model 552A Fiber Optic Viewer and using it as a stereo comparator.

c. Selection of Contractor

X1 [redacted] was considered as a sole source because they manufactured the instruments and have made similar modifications for digitizing the Stereo Point Transfer Device. They are also adding power assist film drives to a Model 552A viewer for this Center under a separate contract.

d. Proposed Program

The proposed program will be completed in five months. A Model 552A Fiber Optic Viewer will be completely modified and made operational before the power assist is added to the Model 552 Stereo Point Transfer Device. The [redacted] bid for the total package is [redacted] 25X1

e. Coordination

This project has been coordinated with all the NPIC activities through the Technical Development Board. There has been close, working level coordination with the Technical Intelligence Division of NPIC.

4. CONCLUSIONS:

The modification of a Model 552A Fiber Optic Viewer with four-axis encoders, cam correction, electronic readout and display, and power assist film drives would quickly result in a reliable stereo comparator capable of fulfilling NPIC's immediate mensuration needs.

Adding power assist film drives to the present Model 552 Stereo Point Transfer Device would help relieve operator fatigue and make operation faster and more efficient.

5. RECOMMENDATIONS:

It is recommended that approval be granted to contract with [redacted] 25X1 [redacted] at a funding level of [redacted] for the modification of a 25X1 Model 552A Stereo Viewer and a Model 552 Stereo Point Transfer Device.

6. REFERENCES AND ATTACHMENTS:

TAB A - Catalog Form
TAB B - Operational Requirement
Attachment - [redacted] Proposal

R & D CATALOG FORM

DATE: 23 February 1967

1. PROJECT TITLE/CODE NAME
Fiber Optic Viewer Modification II

2. SHORT PROJECT DESCRIPTION
The addition of a mensuration capability to an existing fiber optic viewer and power assist transport to two instruments.

3. CONTRACTOR NAME

4. LOCATION OF CONTRACTOR

X1

5. CLASS OF CONTRACTOR
Manufacturer

6. TYPE OF CONTRACT
Fixed Price Supply

7. FUNDS
FY 1966 $ NONE

X1

FY 1967

FY 1968 $ NONE

8. REQUISITION NO.

9. BUDGET PROJECT NO.
NP-V-6-02067

10. EFFECTIVE CONTRACT DATE (*Begin - end*)
1 April 1967 to
1 September 1967

11. SECURITY CLASS.
T - Unclassified
W - Unclassified
AA - Confidential

12. RESPONSIBLE DIRECTORATE/OFFICE/PROJECT OFFICER TELEPHONE EXTENSION

X1

DDI/NPIC/TDS

13. REQUIREMENT/AUTHORITY
These modifications will result in an increased mensuration capability and a reduction in operator fatigue and increase in operator efficiency. These modifications were requested by NPIC/TID.

14. TYPE OF WORK TO BE DONE
Addition of encoders, cam correctors, and readout equipment to a Fiber Optic Viewer. Addition of power assist film transport system to a Fiber Optic Viewer and to a Stereo Point Transfer Device.

15. CATEGORIES OF EFFORT

MAJOR CATEGORY	SUB-CATEGORIES
Viewing System	Mensuration Equipment
	Film Transport Systems

16. END ITEM OR SERVICES FROM THIS CONTRACT/IMPROVEMENT OVER CURRENT SYSTEM, EQUIPMENT, ETC.
The mensuration equipment will provide an increased stereoscopic measuring capability to satisfy an immediate need. The power assist will improve operator efficiency.

17. SUPPORTING OR RELATED CONTRACTS (*Agency & Other*)/COORDINATION
This contractor has had previous contracts for similar modifications of Fiber Optic Viewers for NPIC.

18. DESCRIPTION OF INTELLIGENCE REQUIREMENT AND DETAILED TECHNICAL DESCRIPTION OF PROJECT (*Continue on additional page if required*)
An immediate need exists for a stereoscopic measuring instrument to cope with the rapidly increasing volume of reconnaissance photography. Modification of an existing viewer will provide a reliable measuring instrument that can be used until the stereo comparator presently under development becomes operational three years hence.

19. APPROVED BY AND DATE

OFFICE	DEPUTY DIRECTOR	DDCI

FIBER OPTIC VIEWER DIGITIZATION WORK STATEMENT

1. Purchase, mount, and install [redacted] shaft encoders and electronic modules. The required pulse output or least count is one micron. 25X

2. Purchase and/or fabricate the necessary mounting brackets, gears, and universal coupling to install the shaft encoders.

3. Purchase and/or fabricate the necessary mounting components for X1 the [redacted] electronic modules.

4. Purchase and/or fabricate the necessary interconnecting cables between the shaft encoders, electronic modules, and [redacted] counters, 25X excluding the preset/reset and zero function cables.

5. Fabricate and/or purchase and install a sloped front cabinet and X1 mounting arm for the [redacted] 2825B control panel. It should, as closely as practical, duplicate the mounting assembly for the control panel on the Point Transfer Device.

6. Purchase and/or fabricate the necessary components to install an X1 on/off power switch for the [redacted] component power strip presently X1 contained in [redacted] rack. In addition, one unswitched receptacle is X1 to be provided for the [redacted] synchronizer which is to remain on at all times, and a 15 foot power cord, capable of handling a 20 amp load, is to be provided to go from the wall receptacle and on/off switch and unswitched receptable. A power on pilot light is to also be provided.

7. Purchase and install eight momentary contact switches for the reset/preset and zero functions of the counter. The switches will be connected to the counters through GFE cables provided the appropriate connector is provided.

8. All installed switches are to be appropriately marked, as to function, by a suitable permanent marking such as engraving.

9. The contractor is to provide services to insure the proper encoder signals to counters and proper functioning of the following listed GFE (excluding services provided by manufactures warranties).

X1
   a. Four each [redacted] model 2826C Bidirectional counters.
   b. One each [redacted] model 2827B Synchronizer.
   c. One each [redacted] model 2030A Card Punch Coupler.
   d. One each [redacted] model 2825B Control Panel.
   e. One each cabinet containing [redacted] components, 25X with forced air cooling.
   f. One each IBM model 526 Card Punch.